

ABSTRACT OF THE DISCLOSURE

Transgenes for producing recombinant polypeptides
transgenic bovine species. A transgene for producing
recombinant polypeptides in the milk of transgenic
5 bovine species comprises at least one expression
regulation sequence, a secretory DNA sequence encoding
a secretory signal sequence which is functional in 41
mammary secretory cells of the bovine species and a
recombinant DNA sequence encoding the recombinant
10 polypeptide. Also included are methods for producing
transgenic bovine species. The method includes
introducing the above transgene into an embryonal target
cell of a bovine species, transplanting the transgenic
embryonic target cell formed thereby into a recipient
15 bovine parent and identifying at least one female 101
offspring which is capable of producing the recombinant
polypeptide in its milk. The invention also includes
transgenic bovine species capable of producing
recombinant polypeptides in transgenic milk as well as
20 the milk from such transgenic bovine species and food
formulations containing one or more recombinant
polypeptide. Methods are also provided for producing 153
transgenic non-human mammals having a desirable
phenotype. The method comprises first methylating a
25 transgene followed by introduction into fertilized
oocytes. The oocytes are then cultured to form pre-
implantation embryos. Thereafter, at least one cell is
removed from each of the pre-implantation embryos and
the DNA digested with a restriction endonuclease capable 204
30 of cleaving the methylated transgene but incapable of
cleaving the unmethylated form of the transgene. Those
pre-implantation embryos which have integrated the
transgene contain DNA which is resistant to cleavage by
the restriction endonuclease in the region containing
35 the transgene. 244